

## PATENT ABSTRACTS OF JAPAN

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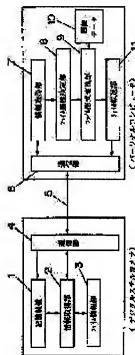
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## (54) IMAGE PROCESSOR

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide an image processor capable of automatically converting image data to be transferred into an optimum file format.

SOLUTION: This image processor is provided with a storage device 1 for storing prescribed image data, an information acquiring part 2 for acquiring information stored in a file information part 3 and the residual capacity of the device 1, an information acquiring part 7 for acquiring the information data acquired by the acquiring part 2, a file attribute determination part 8 for calculating capacity necessary for storing the information data acquired by the acquiring part 7 in each file format and determining an optimum file format, a file format conversion part 9 for converting the image data into the file format determined by the determination part 8, and a file transfer part 11 for transferring the image data of the optimum file format to the device 1.



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**CLAIMS**

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[Claim(s)]

[Claim 1]An image processing device comprising:

Memory storage which memorizes predetermined image data.

The 1st information acquisition section that acquires information stored in a file information part, and remaining capacity of memory storage.

The 2nd information acquisition section that acquires information data acquired by said 1st information acquisition section.

The optimal file deciding part which calculates required capacity when saved by each file format based on information data obtained by said 2nd information acquisition section, and determines optimal file format, A file format converter which changes image data into a file format determined by said optimal file deciding part, and a file transfer part which sends image data of optimal file format to said memory storage.

[Claim 2]An image processing device comprising:

Memory storage which memorizes predetermined image data.

The 1st information acquisition section that acquires information stored in a file information part, and remaining capacity of memory storage.

The 2nd information acquisition section that acquires information data acquired by said 1st information acquisition section.

A file attribute deciding part which determines a file format by which optimal resolution is obtained from information data obtained by said 2nd information acquisition section, A file format converter which changes image data into a file format determined by said file attribute deciding part, and a file transfer part which sends image data of optimal file format to said memory storage.

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[Translation done.]

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]About the image processing device which consists of a digital still camera and a personal computer, especially, this invention is applied to the handling of the file format of image data, and relates to effective art.

[0002]

[Description of the Prior Art]In the image processing device which consists of a personal computer by which remote connection was carried out, the file format renewable by a digital still camera was decided by the digital still camera, this digital still camera, and communication media.

[0003]For this reason, in the former, when a picture was transmitted to a digital still camera from a personal computer, a file format, remaining capacity, etc. by the side of a camera had transmitted image data to the digital still camera from the personal computer, without taking into consideration.

[0004]

[Problem(s) to be Solved by the Invention]Thus, in the conventional image processing device, since the file format of the digital still camera which is the destination was decided, in order to have made it correspond to two or more file formats, there was complicatedness that remaining capacity, a file format, etc. by the side of the camera which is the destination had to be grasped by a help.

[0005]Then, an object of this invention is to provide the image processing device which can change the image data transmitted into the optimal file format automatically.

[0006]

[Means for Solving the Problem]This invention is characterized by an image processing device comprising the following, in order to solve this SUBJECT.

Memory storage which memorizes predetermined image data.

The 1st information acquisition section that acquires information stored in a file information part, and remaining capacity of memory storage.

The 2nd information acquisition section that acquires information data acquired by the 1st information acquisition section.

The optimal file deciding part which calculates required capacity when saved by each file format based on information data obtained by the 2nd information acquisition section, and determines optimal file format, A file format converter which changes image data into a file format determined by the optimal file deciding part, and a file transfer part which sends image data of optimal file format to memory storage.

[0007]It enables this to change image data transmitted into optimal file format automatically via a help.

[0008]This invention is characterized by an image processing device comprising the following.  
Memory storage which memorizes predetermined image data.

The 1st information acquisition section that acquires information stored in a file information part, and remaining capacity of memory storage.

The 2nd information acquisition section that acquires information data acquired by the 1st information acquisition section.

A file attribute deciding part which determines a file format by which optimal resolution is obtained from information data obtained by the 2nd information acquisition section, A file format converter which changes image data into a file format determined by a file attribute deciding part, and a file transfer part which sends image data of optimal file format to memory storage.

[0009]It enables this to change image data transmitted into optimal file format automatically via a help.

[0010]

[Embodiment of the Invention]Memory storage with which the invention of this invention according to claim 1 memorizes predetermined image data, The 1st information acquisition section that acquires the information stored in the file information part, and the remaining capacity of memory storage, The 2nd information acquisition section that acquires the information data acquired by the 1st information acquisition section, The optimal file deciding part which calculates required capacity when saved by each file format based on the information data obtained by the 2nd information acquisition section, and determines the optimal file format, The file format converter which changes image data into the file format determined by the optimal file deciding part, It is an image processing device which has a file transfer part which sends the image data of the optimal file format to memory storage, and has the operation of becoming possible to change the image data transmitted into the optimal file format automatically via a help.

[0011]Memory storage with which the invention according to claim 2 memorizes predetermined image data, The 1st information acquisition section that acquires the information stored in the file information part, and the remaining capacity of memory storage, The 2nd information acquisition section that acquires the information data acquired by the 1st information acquisition section, The file attribute deciding part which determines the file format by which the optimal resolution is obtained from the information data obtained by the 2nd information acquisition section, The file format converter which changes image data into the file format determined by the file attribute deciding part, It is an image processing device which has a file transfer part which sends the image data of the optimal file format to memory storage, and has the operation of becoming possible to change the image data transmitted into the optimal file format automatically via a help.

[0012]Hereafter, an embodiment of the invention is described using drawing 4 from drawing 1. The explanation which gives the same numerals to the same member in these drawings, and overlapped is omitted.

[0013](Embodiment 1) The block diagram showing the image processing device whose drawing 1 is the embodiment of the invention 1, and drawing 2 are flow charts which show the processing operation of the image processing device of drawing 1.

[0014]As shown in drawing 1, the image processing device of this embodiment consists of a digital still camera and a personal computer, and both are connected via a serial cable and communication media 5 called IrDA.

[0015]The digital still camera has the memory storage 1, the information acquisition section (the 1st information acquisition section) 2, the file information part 3, and the communications department 4. Here, the memory storage 1 is memory storage, such as a CompactFlash card and SmartMedia. The information acquisition section 2 acquires the information stored in the file information parts 3, such as resolution and a file format, and the remaining capacity of the memory storage 1. And the communications department 4 performs communication for delivering and receiving predetermined data among the communications departments 6 in the personal computer mentioned later.

[0016]The personal computer has the communications department 6, the information acquisition

section (the 2nd information acquisition section) 7, the file attribute deciding part 8, the file format converter 9, the image data section 10, and the file transfer part 11. Here, the information acquisition section 7 acquires the information data acquired by the information acquisition section 2 of the digital still camera via the communications department 4 and the communications department 6. The file attribute deciding part 8 calculates required capacity, when saved by each file format based on the information data obtained by the information acquisition section 7, and it determines the optimal file format by the priority in conditions set up beforehand, such as image quality serious consideration or capacity serious consideration. The file format converter 9 changes the image data 10 into the file format determined by the file attribute deciding part 8. And the file transfer part 11 transmits the changed image data or the image data which is not changed to a digital still camera via the communications department 6.

[0017]Next, the processing operation of such an image processing device is explained using the flow chart of drawing 2.

[0018]First, the information acquisition section 7 publishes an information acquisition command to the communications department 6 by the personal computer side (Step S13). If an information acquisition command is received from the information acquisition section 7, the communications department 6 will start communication with the communications department 4 connected by the communication media 5, will make an information acquisition command a packet, and will transmit to the communications department 4 of a digital still camera (Step S14).

[0019]If the communications department 4 of a digital still camera receives an information acquisition command, the information acquisition section 2 will acquire information data (Step S15). That is, information data recordable from the file information part 3, such as the mode of a file format, resolution, and the present file format, is acquired for remaining capacity from the memory storage 1. And these information data is replied to the communications department 4. And the communications department 4 makes packet format the replied information data, is on the already established communication and transmits to the communications department 6 of the personal computer side (Step S16). In the communications department 6 which received information data, the received information data is transmitted to the information acquisition section 7.

[0020]The file attribute deciding part 8 calculates the file size in the case of receiving information data from the information acquisition section 7, and saving the present image data by the file format of the received information data (Step S17). In consideration of this file size and the remaining capacity acquired in said information bureau 7, the optimal file format is determined by the file attribute deciding part 8 based on the priority attached by set-up the image quality serious consideration or capacity serious consideration (Step S18).

[0021]And it is compared whether the optimal file format determined by the file attribute deciding part 8 and the present file format are in agreement (Step S19). When the present file format differs from the optimal file format, Image data is transmitted to the file format converter 9, the file format conversion process to the file format determined by the file attribute deciding part 8 is performed (Step S20), and the changed image data is transmitted to the file transfer part 11 after that (Step S21). Since it is not necessary to change the file format of image data when in agreement, the image data of the present file format is transmitted to the file transfer part 11 (Step S21).

[0022]The file transfer part 11 performs issue of a file transmission command, and transmission of image data to the communications department 6. If a transmission command is received, the communications department 6 will establish communication with the communications department 4 connected by the communication media 5, will make a transmission command and image data packet format, and will transmit to the communications department 4 of a digital still camera (Step S22).

[0023]In a digital still camera, the transmitted image data is received and this is stored in the memory storage 1 (Step S23).

[0024]Thus, according to the image processing device of this embodiment, it is judged whether the present file format of image data is the optimal at the file attribute deciding part 8 in a personal

computer, When not the optimal, after transforming a file format into the optimal form, since it transmits to a digital still camera, It becomes possible to change automatically into the optimal file format the image data transmitted to a digital still camera from a personal computer via a help. [0025](Embodiment 2) The block diagram showing the image processing device whose drawing 3 is the embodiment of the invention 2, and drawing 4 are flow charts which show the processing operation of the image processing device of drawing 3